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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/751,091

01/02/2004

Brian H. Moeckly

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EXAMINER

WARTALOWICZ, PAUL A

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

10/14/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/751,091	<b>Applicant(s)</b> MOECKLY ET AL.	
	<b>Examiner</b> PAUL A. WARTALOWICZ	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 65-68 and 71-75 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 65-68 and 71-75 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments with respect to claims 65-68 and 71-75 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 71-74 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 71 and 73 recite "having a  $J_c$  value of about  $1 \times 10^3$  to about  $5 \times 10^6$  A/cm<sup>2</sup> at 4.2 K." However, it is unclear that this recitation has support in the specification. Applicant is requested to point out support for this recitation in the specification. Additionally, it appears that the only recitation of  $J_c$  in the specification is the graph of fig. 6. However, this graph does not appear to give support to the range of  $1.0 \times 10^3$  A/cm<sup>2</sup> to  $5.0 \times 10^6$  A/cm<sup>2</sup>. Fig. 6 appears to give support for about  $2.0 \times 10^3$  A/cm<sup>2</sup> to about  $4.0 \times 10^6$  A/cm<sup>2</sup>.

Clarification and/or correction is required.

***Claim Rejections - 35 USC § 102/103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 65-68, 71-75 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hunt ("All high T<sub>c</sub> edge-geometry...").

Hunt teaches a superconductor Josephson element (pp. 982) comprising a first layer of YBCO base electrode deposited on a surface of a substrate (pp. 982-983), thereafter a barrier layer of non-superconducting YBCO deposited on the base electrode, thereafter a counter-electrode YBCO superconducting layer deposited on the non-superconducting barrier layer YBCO (pp. 982-983). Hunt also discloses that the Josephson junction has a J<sub>c</sub> of  $8.3 \times 10^3 \text{ A/cm}^2$  and a R<sub>n</sub>A of  $1.2 \times 10^{-8} \Omega\text{-cm}^2$  for a barrier layer thickness of 100 Å wherein the barrier layer is uniform (pp. 982-984).

Regarding the limitation that the barrier comprises a non-superconducting, ion-modified surface layer of the first superconductive oxide, it appears that Hunt teaches a substantially similar product, i.e. a non-superconducting barrier layer formed of non-superconducting YBCO which has close lattice matching with superconducting layer of YBCO (pp. 982-984). It appears that the instantly claimed product by process is the same as that which is claimed (a non-superconducting barrier layer formed of non-superconducting YBCO which has close lattice matching with superconducting layer of YBCO). When the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct and not the examiner to show the same process as making. *In re Brown*. 173 USPQ 685 and *In re Fessman*, 180 USPQ 324.

Claims 65-68, 71-75 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hunt (US 5945383).

Hunt teaches a superconductor Josephson element (col. 3) comprising a first layer of YBCO base electrode deposited on a surface of a substrate (col. 3-4), thereafter a barrier layer of non-superconducting YBCO deposited on the base electrode, thereafter a counter-electrode YBCO superconducting layer deposited on the non-superconducting barrier layer YBCO (col. 3-4). Hunt also discloses that the Josephson junction has a  $J_c$  of  $8.3 * 10^3 \text{ A/cm}^2$  and a  $R_n A$  of  $1.2 * 10^{-8} \Omega\text{-cm}^2$  for a barrier layer thickness of  $100 \text{ \AA}$  wherein the barrier layer is uniform (col. 7-8).

Regarding the limitation that the barrier comprises a non-superconducting, ion-modified surface layer of the first superconductive oxide, it appears that Hunt teaches a substantially similar product, i.e. a non-superconducting barrier layer formed of non-superconducting YBCO which has close lattice matching with superconducting layer of YBCO (col. 4). It appears that the instantly claimed product by process is the same as that which is claimed (a non-superconducting barrier layer formed of non-superconducting YBCO which has close lattice matching with superconducting layer of YBCO). When the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct and not the examiner to show the same process as making. *In re Brown*, 173 USPQ 685 and *In re Fessman*, 180 USPQ 324.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL A. WARTALOWICZ whose telephone number is (571)272-5957. The examiner can normally be reached on 8:30-6 M-Th and 8:30-5 on Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Paul Wartalowicz  
October 11, 2009

/Stanley Silverman/  
Supervisory Patent Examiner, AU 1793